

Chapter 2.3 COST/BENEFIT ANALYSIS

Construction Grants

The Federal construction grants program was initiated in 1958 to provide financial assistance to municipalities for the planning, design, and construction of publicly owned treatment works (POTW's). Since then, the program has been an essential element in pollution control efforts, without which many localities would have been unable to provide wastewater treatment systems.

Through 1988, Virginia received approximately \$1.2 billion in federal appropriations for construction grants. These federal funds financed up to 75% of the total eligible cost of approximately 183 projects. The state contributed another \$52.3 million toward project costs, with the remainder coming from local sources. Total local investment in these projects is estimated at \$500 million.

Virginia Revolving Loan Fund

In 1988, the conversion from a grant program to a low-interest loan program to provide financial assistance for the planning, design and construction of POTW's began. The 1986 General Assembly created the Virginia Water Facilities Loan Fund, through which loans are made to local governments at or below current market interest rates for wastewater treatment improvements. Principal and interest repaid into the fund could then be re-loaned again for additional projects. The Federal Water Quality Act of 1987 established a State Revolving Loan Fund Capitalization Grant Program that provided an avenue for states to convert federal grant monies into a State Revolving Loan Fund.

On June 10, 1988, Virginia became the first state in EPA Region III and the fifth state in the nation to receive authorization to administer a State Revolving Loan Program. Since then, Virginia has received federal capitalization grants in each fiscal year (FY's 88 through 01) totaling \$471,264,370. In addition, Virginia has provided \$94,252,875 to the program.

As of June 30, 2001, money in the Fund had accrued interest earnings increasing cumulative fund availability by \$40,578,310. In addition, principal and interest payments from loan recipients totaling \$241,488,096 were returned and made available for additional loans. Also, a leveraging program was implemented in FY 1999 and FY 2000, when demand exceeded available resources, making \$109,788,820 and \$104,716,890, respectively, available to the program in those years.

Ag-BMP Loan Program

The 1999 General Assembly amended Chapter 22 of the Code of Virginia expanding the activities of Virginia's Water Facilities (Wastewater) Revolving Fund to allow low interest loan financing of specific Agricultural Best Management Practices (Ag-BMP). This legislation was to encourage the Commonwealth's farm communities to implement best management practices that reduce or eliminate agricultural non-point source pollution of Virginia's waters. This funding initiative went into effect July 1, 1999. The SWCB was assigned the authority to develop guidelines for the administration of such loans and determine the terms and conditions of any loan from the fund.

Following consultation, review and input from its many stakeholders, the guidelines were developed and the funding initiative was approved by the SWCB at its meeting on December 7, 1999. At that time the Board set aside \$5 million from its Wastewater Revolving Loan Fund revenue to implement the program. Agreements were reached with VRA and the State's three Farm Credit Associations to allow them to perform necessary loan underwriting and execute and disburse loan proceeds to the recipient.

DEQ received its first request for low-interest loan assistance from its AgBMP program on January 14, 2000. As of November 15, 2001, DEQ had authorized \$5,848,274 in low-interest loan assistance to 97 Virginia farmers for eligible BMP projects that would improve water quality in the Commonwealth. To date, DEQ has executed loan agreements that total \$4,868,534 with 83 of those farmers and disbursed \$3,995,612 to them for expenses incurred during implementation of the water quality related BMPs.

Loans approved during the first calendar year of program operation provide and allow for environmentally responsible storage and handling of approximately 47.7 million gallons of slurry (liquid) manure and 10,464 tons of dry manure based on the farms' projected operation, each year through the design life of the facilities installed.

In June of 2001, the Board took action to increase funding availability for this program and set aside another \$5 million from available FY 2002 resources. The program continues to operate on a monthly cycle and is adding 5 to 6 farm operations to its funding list each month. As of this writing, 57 farm loan projects have been completed and have entered the repayment stage. To date, there have been no defaults and all farmers remain current with their loan repayments.

Table 2.3 - 1 summarizes the Revolving Loan Fund status as of June 30, 2001.

Table 2.3 - 1 - Summary of Revolving Loan Fund

	Number	Amount
Section 212 Loans Closed	178	\$839,037,675.67
AgBMP Loans Closed	60	\$ 3,538,889.00
Section 212 Loans Approved	19	\$ 40,454,438.00
AgBMP Loans Authorized	16	\$ 1,117,750.00
Section 212 Loans Targeted for FY 2002	19	\$ 87,782,572.00
Additional Section 319 Loans Targeted for FY 2002	1	\$ 2,981,842.00
TOTAL	293	\$974,785,766.67

The impact of Virginia's various loan programs on water quality and public health can be summarized as follows:

- # Eliminated Virginia's 12 remaining municipal "primary discharge" treatment plants
- # Upgraded or replaced 31 inadequate municipal wastewater treatment lagoon systems
- # Upgraded, expanded or replaced 106 outdated public wastewater treatment facilities
- # Eliminated 121 major points of raw sewage overflows
- # Improved water quality and reduced operating expenses at 62 projects by significantly reducing infiltration/inflow loading to the plant and the receiving stream
- # Addressed 33 potential public health hazard situations by eliminating failing septic systems, pit privies and straight-line discharges through the construction of public sewer systems
- # Installed nutrient removal technology at 6 municipal treatment facilities discharging to the Chesapeake Bay
- # The State's AgBMP Program has authorized, as of July 10, 2001, loans to provide and allow for environmentally responsible storage and handling of approximately 47.7 million gallons of slurry (liquid) manure and 10,464 tons of dry manure each year through the design life of the facilities installed based on the farms' projected operation.

604(b), 104(b)(3), and Clean Lakes Grant Programs

These Federal funds have historically been used for Water Quality Management Planning and Implementation projects. The financial resources have been split between the Planning District

Commissions for watershed planning and educational activities and internal Special Projects for equipment acquisitions to facilitate water quality monitoring and assessment activities and for special studies.

During this assessment cycle, under direction from EPA, emphasis has been placed on projects that lead to, or support, TMDL development. Approximately \$2,000,000 was committed to the TMDL program efforts through utilization of these Federal Grant Funds. Note that Clean Lakes funding ceased during 1996. The following projects have been funded during this assessment cycle supporting TMDL activities:

- Minimum Instream Flow Project, Phase V: Shenandoah River
- Hardware and software acquisition for TMDL activities
- Muddy Creek Nitrate TMDL, Rockingham County
- Non-Point Pollution Study, DEQ West Central Regional Office
- Pamunkey River Model
- Winterpock Creek & Upham Creek data collection
- Trout Farm Solids Reduction Study
- Supplemental Stream Gauging and gauging equipment
- State of the Rivers Report: FORVA
- Four Mile Run Source Identification Project
- Moore's Creek Source Identification Project
- Hopewell Estuary Monitoring and Assessment
- Long Term Trend Analysis software development
- Source Identification for: Accotink Creek, Blacks Run, and Christians Creek
- Muddy Creek Fecal Coliform TMDL revision
- Phases II & III: Validation of Citizen Benthic Monitoring Methods

Table 2.3 - 2 are summaries of 604(b), 104(b)(3), and Clean Lakes grant expenditures for the period January 1, 1996 through December 31, 2000.

Table 2.3 - 2 Summary of Water Quality Management Grants

Year	604(b)	104(b)(3)	Clean Lakes	Yr. Total
1995-1996	\$254,620	\$182,160	\$28,000	\$464,780
1996-1997	\$417,075	\$161,807	-0-	\$578,882
1997-1998	\$221,655	\$189,760	-0-	\$411,415
1998-1999	\$220,000	\$100,000	-0-	\$320,000
1999-2000	\$220,000	\$88,800	-0-	\$308,800
TOTALS	\$1,333,350	\$722,527	\$28,000	\$2,083,877